	Application No.	Applicant(s)
Notice of Allowability	10/044,364	WILSON ET AL.
	Examiner	Art Unit	
	Gary J. Portka	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amendment filed December 22, 2004*.

2. ☒ The allowed claim(s) is/are *1, 3-16, 18-21, and 23-28, renumbered as 1-25 respectively*.

3. ☒ The drawings filed on *11 January 2002* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some*   c)☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a)☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1)☐ hereto or 2)☐ to Paper No./Mail Date _____ .

    (b)☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

    Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 6/1/04

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

REASONS FOR ALLOWANCE

1.   The following is an examiner's statement of reasons for allowance: The prior art

of record does not teach nor suggest, a method, apparatus, and medium with

instructions for managing a memory system with subsystems comprising:

a.   As claimed in claims 14, 20, and 25, comparing an access time of a

subsystem to a threshold that is selected based on cost of switching processes,

earmarking the subsystem based on the comparison, determining an order for

data to be accessed from a shorter to a longer access time subsystem, and upon

accessing if the data is missed in the earmarked subsystem, postponing

execution of a first process and allowing execution of a second process; or

b.   As claimed in claims 1, 16, and 21, upon accessing the memory for data

used by a first process, determining an access time to acquire the data,

comparing the determined time to a threshold whose value is selected based on

cost of switching processes, and based on the comparison postponing execution

of a first process and allowing execution of a second process.

2.   The closest art found appears to be Borkenhagen et al., US 6,697,935 B1.

Borkenhagen describes the switch of active thread based variously on whether

requested data has been missed in L1, L2 caches (see col. 12 lines 57-65), that

comparison with a time rather than miss indication may be used for the switch (see col.

13 lines 50-60), and that the latency of an event generating a thread switch must be

greater that the cost associated with switching threads for optimal performance (see col.

13 lines 5-22). However, Borkenhagen does not specifically state that a comparision

time be selected based on the cost of switching processes, and it is not clear from these teachings whether such a modification would be considered obvious. Borkenhagen has no teaching relevant to the earmarking of a subsystem based on access time comparison to a threshold, and the related switching of processes if the subset is missed. More importantly, with regard specifically to claims 1, 16, and 21, in Borkenhagen, "If the miss data has not been returned from the L2 cache after a predetermined number of cycles, the processor acts as if there had been a L2 cache miss and changes the thread's state accordingly." (col. 13 lines 57-60) Thus, the method does not determine the access time to acquire the data, and compare the time to a threshold; in Borkenhagen the processes will be switched if the data has not been acquired by the threshold time, while the invention requires the data to be acquired to compare the determined access time to the threshold.

REMARKS

3.   The information disclosure submitted June 1, 2004 cited four references. Three of these were cited in a previous office action PTO-892 form and have been crossed out; the remaining reference has been considered as shown on the attached PTO-1449 copy.

4.   Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary J. Portka whose telephone number is (571) 272-4211. The examiner can normally be reached on M-F 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571) 272-4210. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gary J Portka
Primary Examiner
Art Unit 2188

May 12, 2005

GARY PORTKA
PRIMARY EXAMINER